

WE CLAIM:

1. A computer system comprising:
a plurality of computers connected to each other,
wherein each computer includes a controller,
responsive to a processing requirement from another computer,
for controlling access to a shared memory device connected to
said computer based on structural definition information which
describes a structure of said computer system.
2. A computer system according to claim 1, wherein said
computer system is a loosely-coupled computer system.
3. A computer system according to claim 1, wherein said
computers are connected to each other by a coupling mechanism.
4. A computer system according to claim 3, wherein said
coupling mechanism is a bus.
5. A computer system according to claim 3, wherein said
coupling mechanism includes at least a switch.
6. A computer system according to claim 3, wherein said
coupling mechanism is an asynchronous transfer mode switching
system.
7. A computer system according to claim 1, wherein said
controller comprises:
a requirement acceptance judging section for checking

whether access to said shared memory device from said another computer is permitted based on said structural definition information and performing control of said access if said access is permitted.

8. A computer system according to claim 7, wherein said structural definition information includes information indicating a corresponding relation between virtual identifiers and said shared memory devices and information indicating for each virtual identifier which of said computers is permitted to access the shared memory device corresponding to said virtual identifiers, and

wherein said control of said access is performed using said virtual identifiers.

9. A computer system according to claim 1, wherein said controller comprises:

a remote processing requirement section for issuing a remote processing requirement to said another computer to access said shared memory device connected to said another computer.

10. A computer system according to claim 7, wherein said controller comprises:

a remote processing requirement a section for issuing a remote processing requirement to said another computer to access said shared memory device connected to said another computer.

11. A computer system according to claim 8, wherein said controller comprises:

a remote processing requirement section for issuing a remote processing requirement to said another computer to access said shared memory device connected to said another computer.

12. A computer system according to claim 1, wherein said controller comprises:

a remote processing requirement section for issuing a remote processing requirement to said another computer to access said shared memory device connected to said another computer; and

a remote processing requirement processing section for processing said remote processing requirement when access to said shared memory device is permitted.

13. A computer system according to claim 7, wherein said controller comprises:

a remote processing requirement section for issuing a remote processing requirement to said another computer to access said shared memory device connected to said another computer;

wherein said requirement acceptance judging section, responsive to a remote processing requirement from another computer, checks said structural definition information to determine whether access to said shared memory device is permitted; and

a remote processing requirement processing section for processing said remote processing requirement from said another computer when access to said shared memory device is permitted.

14. A computer system according to claim 8, wherein said controller comprises:

a remote processing requirement section for issuing a remote processing requirement to said another computer to access said shared memory device connected to said another computer;

wherein said requirement acceptance judging section, responsive to a remote processing requirement from another computer, checks said structural definition information to determine whether access to said shared memory device is permitted; and

a remote processing requirement processing section for processing said remote processing requirement from said another computer when access to said shared memory device is permitted.

15. A computer system according to claim 1, wherein said computer system is changed to a different structure by changing said structural definition information.

16. A computer system according to claim 7, wherein said computer system is changed to a different structure by changing said structural definition information.

17. A computer system according to claim 8, wherein said computer system is changed to a different structure by changing said structural definition information.

18. A computer system according to claim 9, wherein said computer system is changed to a different structure by changing said structural definition information.

19. A computer system according to claim 10, wherein said computer system is changed to a different structure by changing said structural definition information.

20. A computer system according to claim 11, wherein said computer system is changed to a different structure by changing said structural definition information.

21. A computer system according to claim 12, wherein said computer system is changed to a different structure by changing said structural definition information.

22. A computer system according to claim 13, wherein said computer system is changed to a different structure by changing said structural definition information.

23. A computer system according to claim 14, wherein said computer system is changed to a different structure by changing said structural definition information.

24. A computer system according to claim 8, wherein correspondence between said virtual identifiers and said shared memory devices can be changed by changing said structural definition information.

25. A computer system according to claim 11, wherein correspondence between said virtual identifiers and said shared memory devices can be changed by changing said structural definition information.

26. A computer system according to claim 14, wherein correspondence between said virtual identifiers and said shared memory devices can be changed by changing said structural definition information.

27. A computer system according to claim 17, wherein correspondence between said virtual identifiers and said shared memory devices can be changed by changing said structural definition information.

28. A computer system according to claim 20, wherein correspondence between said virtual identifiers and said shared memory devices can be changed by changing said structural definition information.

29. A computer system according to claim 23, wherein correspondence between said virtual identifiers and said shared

memory devices can be changed by changing said structural definition information.

30. In a computer system having a plurality of computers connected to each other, wherein each computer is connected to a shared disk through a disk controller which controls access to said shared disk, said disk controller comprising:

a memory for storing structural definition information which describes a structure of said computer system; and

a controller, responsive to a processing requirement, from another computer for controlling access to said shared disk memory device connected to said computer based on said structural definition information.

31. A disk controller according to claim 30, wherein said computer system is a loosely-coupled computer system.

32. A disk controller according to claim 30, wherein said computers are connected to each other by a coupling mechanism.

33. A disk controller according to claim 32, wherein said coupling mechanism is a bus.

34. A disk controller according to claim 32, wherein said coupling mechanism includes at least a switch.

35. A disk controller according to claim 32, wherein said

coupling mechanism is an asynchronous transfer mode switching system.

36. A disk controller according to claim 30, wherein said controller comprises:

a requirement acceptance judging section for checking whether access to said shared disk from said another computer is permitted based on said structural definition information and performing control of said access if said access is permitted.

37. A disk controller according to claim 36, wherein said structural definition information includes information indicating a corresponding relation between virtual identifiers and said shared disks and information indicating for each virtual identifier which of said computers is permitted to access the shared disk corresponding to said virtual identifiers, and

wherein said control of said access is performed using said virtual identifiers.

38. A disk controller according to claim 30, wherein said controller comprises:

a remote processing requirement section for issuing a remote processing requirement to said another computer to access said shared disk connected to said another computer.

39. A disk controller according to claim 36, wherein said

controller comprises:

a remote processing requirement a section for issuing a remote processing requirement to said another computer to access said shared disk connected to said another computer.

40. A disk controller according to claim 37, wherein said controller comprises:

a remote processing requirement section for issuing a remote processing requirement to said another computer to access said shared disk connected to said another computer.

41. A disk controller according to claim 30, wherein said controller comprises:

a remote processing requirement section for issuing a remote processing requirement to said another computer to access said shared disk connected to said another computer; and

a remote processing requirement processing section for processing said remote processing requirement when access to said shared disk is permitted.

42. A disk controller according to claim 36 wherein said controller comprises:

a remote processing requirement section for issuing a remote processing requirement to said another computer to access said shared disk connected to said another computer;

wherein said requirement acceptance judging section, responsive to a remote processing requirement from another computer, checks said structural definition information to

determine whether access to said shared disk is permitted; and
a remote processing requirement processing section
for processing said remote processing requirement from said
another computer when access to said shared disk is permitted.

43. A disk controller according to claim 36, wherein said
controller comprises:

a remote processing requirement section for issuing a
remote processing requirement to said another computer to
access said shared disk connected to said another computer;

wherein said requirement acceptance judging section,
responsive to a remote processing requirement from another
computer, checks said structural definition information to
determine whether access to said shared disk is permitted; and

a remote processing requirement processing section
for processing said remote processing requirement from said
another computer when access to said shared disk is permitted.

44. A disk controller according to claim 30, wherein said
computer system is changed to a different structure by changing
said structural definition information.

45. A disk controller according to claim 36, wherein said
computer system is changed to a different structure by changing
said structural definition information.

46. A disk controller according to claim 37, wherein said
computer system is changed to a different structure by changing

said structural definition information.

47. A disk controller according to claim 38, wherein said computer system is changed to a different structure by changing said structural definition information.

48. A disk controller according to claim 39, wherein said computer system is changed to a different structure by changing said structural definition information.

49. A disk controller according to claim 40, wherein said computer system is changed to a different structure by changing said structural definition information.

50. A disk controller according to claim 41, wherein said computer system is changed to a different structure by changing said structural definition information.

51. A disk controller according to claim 42, wherein said computer system is changed to a different structure by changing said structural definition information.

52. A disk controller according to claim 43, wherein said computer system is changed to a different structure by changing said structural definition information.

53. A disk controller according to claim 37, wherein correspondence between said virtual identifiers and said shared

disks can be changed by changing said structural definition information.

54. A disk controller according to claim 40, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

55. A disk controller according to claim 43, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

56. A disk controller according to claim 46, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

57. A disk controller according to claim 49, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

58. A disk controller according to claim 52, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

59. In a computer system having a plurality of computers connected to each other, wherein each computer is connected to a shared disk and is directed by a computer program for controlling access to said shared disk, said computer program comprising:

a first code for causing said computer to store structural definition information in a memory, said structural definition information describes a structure of said computer system; and

a second code for causing said computer, responsive to a processing requirement from another computer, to control access to said shared disk connected to said computer based on said structural definition information.

60. A computer program according to claim 59, wherein said computer system is a loosely-coupled computer system.

61. A computer program according to claim 59, wherein said computers are connected to each other by a coupling mechanism.

62. A computer program according to claim 61, wherein said coupling mechanism is a bus.

63. A computer program according to claim 61, wherein said coupling mechanism includes at least a switch.

64. A computer program according to claim 61, wherein

said coupling mechanism is an asynchronous transfer mode switching system.

65. A computer program according to claim 59, wherein said second code comprises:

a requirement acceptance judging code for causing said computers to check whether access to said shared disk from said another computer is permitted based on said structural definition information and perform control of said access if said access is permitted.

66. A computer program according to claim 65, wherein said structural definition information includes information indicating a corresponding relation between virtual identifiers and said shared disks and information indicating for each virtual identifier which of said computers is permitted to access the shared disk corresponding to said virtual identifiers, and

wherein said control of said access is performed using said virtual identifiers.

67. A computer program according to claim 59, wherein said second code comprises:

a remote processing requirement code for causing said computer to issue a remote processing requirement to said another computer to access said shared disk connected to said another computer.

68. A computer program according to claim 65, wherein said second code comprises:

a remote processing requirement a code for causing said computer to issue a remote processing requirement to said another computer to access said shared disk connected to said another computer.

69. A computer program according to claim 66, wherein said second code comprises:

a remote processing requirement code for causing said computer to issue a remote processing requirement to said another computer to access said shared disk connected to said another computer.

70. A computer program according to claim 59, wherein said second code comprises:

a remote processing requirement processing code for causing said computer to process said remote processing requirement when access to said shared disk is permitted.

71. A computer program according to claim 65, wherein said second code comprises:

a remote processing requirement code for causing said computer to issue a remote processing requirement to said another computer to access said shared disk connected to said another computer;

wherein said requirement acceptance judging code, responsive to a remote processing requirement from another

computer, checks said structural definition information to determine whether access to said shared disk is permitted; and a remote processing requirement processing code for causing said computer to process said remote processing requirement from said another computer when access to said shared disk is permitted.

72. A computer program according to claim 66, wherein said second code comprises:

a remote processing requirement code for causing said computer to issue a remote processing requirement to said another computer to access said shared disk connected to said another computer;

wherein said requirement acceptance judging code, responsive to a remote processing requirement from another computer, checks said structural definition information to determine whether access to said shared disk is permitted; and

a remote processing requirement processing code for causing said computer to process said remote processing requirement from said another computer when access to said shared disk is permitted.

73. A computer program according to claim 59, wherein said computer system is changed to a different structure by changing said structural definition information.

74. A computer program according to claim 65, wherein said computer system is changed to a different structure by

changing said structural definition information.

75. A computer program according to claim 66, wherein said computer system is changed to a different structure by changing said structural definition information.

76. A computer program according to claim 67, wherein said computer system is changed to a different structure by changing said structural definition information.

77. A computer program according to claim 68, wherein said computer system is changed to a different structure by changing said structural definition information.

78. A computer program according to claim 69, wherein said computer system is changed to a different structure by changing said structural definition information.

79. A computer program according to claim 70, wherein said computer system is changed to a different structure by changing said structural definition information.

80. A computer program according to claim 71, wherein said computer system is changed to a different structure by changing said structural definition information.

81. A computer program according to claim 72, wherein said computer system is changed to a different structure by

changing said structural definition information.

82. A computer program according to claim 66, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

83. A computer program according to claim 69, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

84. A computer program according to claim 72, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

85. A computer program according to claim 75, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

86. A computer program according to claim 78, wherein correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

87. A computer program according to claim 71, wherein

correspondence between said virtual identifiers and said shared disks can be changed by changing said structural definition information.

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